

Interactive comment on “Effect of the summer monsoon on aerosols at two measurement stations in Northern India – Part 1: PM and BC concentrations” by A.-P. Hyvärinen et al.

Anonymous Referee #2

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General comments

This paper is an interesting and important contribution to understand the influence of the monsoon on particulate matter (PM) concentration and containing black carbon (BC) in Northern India. The authors give a description of the local geographical situation and the technical instrumentation and give detailed information about data processing. In contrast the discussion about the influence of different mixing heights caused by geographical situation for both compared stations and its possible repercussion to the measured concentrations is short written. Also a much more detailed description and discussion of the results especially regarding to the pictures should be

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given. However the results of both stations represent the influence of emissions from the different surroundings and the long-range transport modified by seasons and local meteorology. For Northern India these results are new. The results indicate the bad air quality situation mostly caused by anthropogenic emissions in North India, especially in Gual Pahari, where the annular standards were exceeded alarmingly.

The manuscript is compact and understandable written. The title is comprehensive. The abstract is adequate. All tables and picture are of good technical quality and referred in the text. The references are from state of the art and all cited in the text. Because I am not a native speaker I cannot give hints for improvements of the quality of English writing and recommend the control by a native speaker.

I recommend the publication of the paper in his structure and with all containing tables and pictures. Hints for technical improvements and for typing errors are given in following special comments

Special comments

Page 1718, line 23: cancel the letter “a” for the year in Hyvärinen et al., 2010a.

Page 1721, line 11: instead of “Taken together, these quantities provide a good basis for distinguishing between ...” you can write better “Taken together, these quantities provide the basis for distinguishing between ...”

Page 1724, line 5: the citation “(see Gautam et al, 2009b and references within)” is missing in the reference list. Cancel letter “b” for the year 2009.

Page 1724, line 6: “... high concentration during monsoon being mineral dust is investigated in Sect. 3.5.” you can write better “... high concentration during monsoon being mineral dust is discussed in Sect. 3.5.”

Figure 4 (page 1740): The dotted lines fort the monthly rain accumulation cannot distinguish. Please use here different colors also.

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